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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,719	01/25/2006	Ashok M. Adur	1200309N US	7466
35227 7590 11/04/2009 POLYONE CORPORATION 33587 WALKER ROAD AVON LAKE, OH 44012				
EXAMINER				
LENIHAN, JEFFREY S				
ART UNIT		PAPER NUMBER		
1796				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/565,719

Applicant(s)

ADUR, ASHOK M.

Examiner

Jeffrey Lenihan

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Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8, 10, 11 and 13-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8, 10, 11 and 13-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/S6108)
Paper No(s)/Mail Date 08/21/2009
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This Office Action is responsive to the amendment filed on 06/23/2009.
2. The objections and rejections not addressed below are deemed withdrawn.
3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

Claim Objections

4. Claim 8 is objected to because of the following informalities: The claim recites "wherein the at least one thermoplastic phase consisting essentially of at least one propylene-based polymer..." The examiner suggests replacing "consisting" with "consists." Appropriate correction is required.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office actions.

5. Claims 8, 10, 11, and 13-15 rejected under 35 U.S.C. 103(a) as being unpatentable over Asuka, JP 2000-095902 (of record) in view of Takahashi et al, JP 2001-081236, and Utz et al, US2003/0148056.
6. The rejection stands as per the reasons outlined in the previous Office Action. Regarding the amendments to claim 8, the examiner notes that the newly added limitations of the composition of the thermoplastic elastomer and the rate of crystal formation were previously recited in the now canceled claim 1. The claimed amount of nucleating agent was previously recited in the now canceled 5.

7. Regarding newly added claim 15: As stated in previous Office Actions, Asuka teaches the addition of 0.005 to 0.1 parts by weight (pbw) of sodium benzoate as a nucleating agent in an olefin resin. Takahashi discloses the addition of 0.005 to 5 pbw of a nucleating agent such as metal salt of an organophosphate ester salt, to 100 pbw of a polyolefin resin (¶0049), corresponding to a final concentration of approximately 0.005% to 4.8% nucleating agent. Utz teaches the use of 100 to 4000 ppm (or 0.01 to 0.4% by weight) (¶0115) of a nucleating agent such as talc (¶0114) or a norbornane carboxylic acid salt (¶0117).

8. It has been held that a *prima facie* case of obviousness exists where the claimed ranges overlap or lie inside ranges disclosed in the prior art; see *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); see *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990) (MPEP § 2144.05). The claimed amounts of the individual nucleating agents lie within the ranges disclosed in the prior art; it therefore would have been obvious to one of ordinary skill in the art at the time the invention was made to use the claimed amounts of the nucleating agents (claim 15).

Response to Arguments

9. Applicant's arguments filed 06/23/2009 have been fully considered but they are not persuasive.

10. Applicant states that none of the applied references discloses the production of a molded article. The examiner disagrees with this statement. Asuka teaches the production of films via extrusion with a T-die method, corresponding to an extrusion-molded film. Furthermore, Asuka teaches that the polymer composition of JP2000-

095902 may be used in the production of molded articles, such as containers for cosmetics, (§10071, "Effect of the Invention") in addition to its use in the production of films. It has been held that "a reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art, including non-preferred embodiments," *Merck & Co. v. Biocraft Laboratories*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.). Also, "[d]isclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or non-preferred embodiments," see *In re Susi* 440 F.2d 442, 169 USPQ 423 (CCPA 1971). (MPEP § 2123 [R-5]). The examiner therefore maintains the position that Asuka teaches the production of molded articles.

11. Regarding the reduction in cycle time, it has been held that "[T]he discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not render the old composition patentably new to the discoverer;" see *Atlas Powder Co. v. Ireco Inc.*, 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999). Thus the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable; see *In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). There is no requirement that a person of ordinary skill in the art would have recognized the inherent disclosure *at the time of invention*, but only that the subject matter is in fact inherent in the prior art reference; see *Schering Corp. v. Geneva Pharm. Inc.*, 339 F.3d 1373, 1377, 67 USPQ2d 1664, 1668 (Fed. Cir. 2003). Finally, "[m]ere recognition of latent properties in the prior art does not render

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nonobvious an otherwise known invention;" see *In re Wiseman*, 596 F.2d 1019, 201 USPQ 658 (CCPA 1979).

12. The examiner directs applicant's attention to Drobny, Handbook of Thermoplastic Elastomers, which was cited by the examiner in the Office Action mailed 07/28/2008 and a copy of which was provided to applicant at that time. Drobny states that addition of nucleating agents results in an increase in the rate of polymer crystallization and a reduction in molding cycle time (Page 15, 1st Column, lines 20-23). The examiner further directs applicant to Harper, Modern Plastics Handbook (published in 2000), which was also cited and provided to applicant in the Office Action mailed 07/28/2009. Harper states that nucleating agents shorten cycle time by reducing set-up time in the mold (page 4.54, lines 36-37). Applicant's process steps are rendered obvious by the prior art as discussed in the previous Office Actions, incorporated herein by reference. As the prior art renders obvious a process comprising the same steps using similar thermoplastic elastomers and similar amounts of the same nucleating agents, the properties/effects of the prior art process would necessarily be the same as claimed and inherently be not materially different from those of the claimed invention. The property of reducing cycle time is therefore inherently met by the prior art process. Applicant is therefore required to provide factual evidence demonstrating an unobvious difference between the claimed invention and the prior art process.

13. Regarding the allegedly unexpected results, the examiner first notes that the alleged results are not commensurate in scope with the invention as currently claimed. Independent claim 8 recites that the composition may contain as little as 0.005% by

weight of the nucleating agents. Both of the examples cited by applicant (Examples 10 and 11) contain a total of 0.55% by weight nucleating agents; the examiner notes that this amount is 110 times greater than the minimum value recited by applicant in the independent claim. No data has been provided to demonstrate that the allegedly unexpected results may be obtained commensurate with the claimed range. Furthermore, the independent claim broadly states that the thermoplastic elastomer comprises a propylene-based polymer as the thermoplastic phase and a either a styrenic copolymer rubber or an at least partially cross-linked EPDM as the elastomeric phase. The cited examples each teach the addition of the nucleating agents to two commercially available thermoplastic vulcanizates (TPVs); the examples do not disclose the composition of said TPVs. The examiner therefore cannot determine whether the allegedly unexpected results can be obtained commensurate in scope with the claimed thermoplastic elastomer.

14. As discussed above, it is known in the art that the addition of nucleating agents increases the rate of polymer crystallization and, consequently, reduces the cycle time. The examiner therefore maintains the position that merely stating that the cycle time is reduced compared to an unmodified polymer does not constitute an unexpected result. As noted in previous Office Actions, applicant has not provided evidence that the degree by which the cycle time is reduced is unexpected.

15. To rebut a presumption of obviousness, applicant may show "that there are new and unexpected results relative to the prior art;" see *Iron Grip Barbell Co., Inc. v. USA Sports, Inc.*, 392 F.3d 1317,1322,73 USPQ2d 1225, 1228 (Fed. Cir. 2004). As

discussed earlier in this Office Action, the addition of the claimed nucleating agents in the claimed range is taught in the prior art. The difference between the claimed invention and the prior art therefore is not the addition of a nucleating agent to an unmodified polymer; rather, the difference between the claimed invention and the prior art is the addition of four types/classes of nucleating agents in combination with one another. Applicant therefore is required to demonstrate that the claimed combination of nucleating agents results in a reduction in cycle time by a degree that is unexpected in view of the results obtained when comparable amounts of the nucleating agents are used in the prior art.

16. The examiner notes that Examples 1-9 of the instant specification disclose compositions containing either individual nucleating agents (Examples 1-8) or a combination of three nucleating agents (Example 9). The examiner notes, however, that applicant has not provided information regarding the degree by which the cycle time is reduced for these Examples. Furthermore, the examples only contain the nucleating agent in an overall amount of 0.10% (Examples 1-3), 0.25% (Examples 4-8), or 0.35% (Example 9). The amount of nucleating agent added to the compositions of Examples 1-9 therefore is not comparable to the amount of nucleating agent used in the illustrative examples (0.55% by weight). Applicant has not provided evidence to demonstrate that the 22% reduction in cycle time observed when the claimed combination of nucleating agents is used is unexpected compared to the reductions in cycle time measured when comparable amounts of the individual nucleating agents are used separately. It currently cannot be determined whether said 22% reduction is the result of combining

the four claimed nucleating agents, or is merely a cumulative result stemming from the addition of an increased amount of nucleating agent. The examiner therefore maintains the position that applicant has not demonstrated that unexpected results are obtained from the claimed invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey Lenihan whose telephone number is (571)270-5452. The examiner can normally be reached on Monday through Thursday from 7:30-5:00 PM, and on alternate Fridays from 7:30-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James J. Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ Irina S. Zemel/
Primary Examiner, Art Unit 1796

Jeffrey Lenihan
Examiner
Art Unit 1796

/JL/